

# 6BA11

## Medium-Mu Triode— Sharp-Cutoff Twin Pentode

### DUODECAR TYPE

#### Electrical:

##### Heater Characteristics and Ratings:

Voltage (AC or DC) . . . . .	6.3 $\pm$ 0.6 <sup>a</sup> volts
Current at heater volts = 6.3 . . . . .	0.600 <sup>b</sup> amp
Warm-up time (Average) . . . . .	11 sec

##### Peak heater-cathode voltage:

Heater negative with respect to cathode . . . . .	200 max. volts
Heater positive with respect to cathode . . . . .	200 <sup>c</sup> max. volts

##### Direct Interelectrode Capacitances:<sup>d</sup>

##### Triode Unit:

Grid to plate . . . . .	2.0	pf
Input: $G_T$ to ( $K_T$ , H) . . . . .	2.0	pf
Output: $P_T$ to ( $K_T$ , IS, H) . . . . .	1.9	pf

##### Each Pentode Unit:

$G_{3p}$ to $P_p$ . . . . .	2.0	pf
$G_{3p}$ to all other electrodes . . . . .	3.6	pf
$G_{1p}$ to all other electrodes . . . . .	6.0	pf
$P_p$ to all other electrodes . . . . .	3.0	pf
$G_{3p1}$ to $G_{3p2}$ . . . . .	0.026 max.	pf

#### Mechanical:

Operating Position . . . . .	Any
Type of Cathodes . . . . .	Coated Unipotential
Maximum Overall Length . . . . .	2.375"
Seated Length . . . . .	1.750" to 2.000"
Diameter . . . . .	.1.062" to 1.188"
Dimensional Outline . . . . .	See <i>General Section</i>
Bulb . . . . .	T9
Base . . . . .	Small-Button Duodecar 12-Pin (JEDEC E12-70)

Basing Designation for BOTTOM VIEW. . . . . 12ER

Pin 1—Heater  
Pin 2—Plate of Pentode Unit  
No.2

Pin 3—Pentodes Grid No.2,  
Internal Shield

Pin 4—Pentodes Grid No.1

Pin 5—Grid No.3 of  
Pentode Unit No.2

Pin 6—Plate of Pentode Unit  
No.1

Pin 7—Grid No.3 of  
Pentode Unit No.1

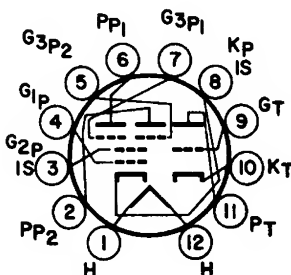
Pin 8—Pentodes Cathode,  
Internal Shield

Pin 9—Triode Grid

Pin 10—Triode Cathode

Pin 11—Triode Plate

Pin 12—Heater



RADIO CORPORATION OF AMERICA  
Electronic Components and Devices  
Harrison, N. J.

DATA  
6-64

# 6BA11

## Characteristics, Class A<sub>1</sub> Amplifier:

	Triode Unit	Pentode Units				
		Each Separately <sup>e</sup>		Both Operating <sup>f</sup>		
Plate Voltage. . . . .	250	100	100	100	100	volts
Grid-No.3 Voltage. . . . .	-	0	0	-10	0	volts
Grid-No.2 Voltage. . . . .	-	67.5	67.5	67.5	67.5	volts
Grid-No.1 Voltage. . . . .	-11	0	<b>g</b>	<b>g</b>	<b>g</b>	volts
Amplification Factor . . . . .	18	-	-	-	-	
Grid No.3 Transconductance. . . . .	-	-	450	-	-	$\mu$ mhos
Grid No.1 Transconductance. . . . .	1800	1700	-	-	-	$\mu$ mhos
Plate Current. . . . .	5	-	2.5	0	2.5	ma
Grid No.2 Current. . . . .	-	-	-	7	4.4	ma
Grid-No.3 Voltage (Approx.) for plate $\mu$ a = 100 . . . . .	-	-	-3.2	-	-	volts
Grid-No.1 Voltage (Approx.) for plate $\mu$ a = 100 . . . . .	-18	2.3	-	-	-	volts

## AMPLIFIER — Class A<sub>1</sub>

	Triode Unit	Pentode Unit	
<b>Maximum Ratings, Design-Maximum Values:</b>			
Plate Voltage. . . . .	300 max.	300 max.	volts
Grid-No.3 (Suppressor-Grid) Voltage:			
Peak positive value. . . . .	-	50 max.	volts
DC negative value. . . . .	-	50 max.	volts
DC positive value. . . . .	-	3 max.	volts
Grid-No.2 (Screen-Grid) Voltage. . . . .	-	150 max.	volts
Grid-No.1 (Control-Grid) Voltage:			
Negative-bias value. . . . .	-	50 max.	volts
Cathode Current. . . . .	20	12 max.	ma
Grid-No.2 Input. . . . .	-	0.75 max.	watts
Plate Dissipation (Each Plate). . . . .	1.5	1.1 max.	watts

## Maximum Circuit Values:

Grid-No.3-Circuit Resistance (Each Grid). . . . .	-	0.5 max.	megohm
Grid-No.1-Circuit Resistance:			
For fixed-bias operation . . . . .	0.25 max.	0.5 max.	megohm
For cathode-bias operation . . . . .	1 max.	0.5 max.	megohm

<sup>a</sup> For parallel heater operation.

<sup>b</sup> For series heater operation current must be limited to  $0.600 \pm 0.040$  amperes.

<sup>c</sup> The dc component must not exceed 100 volts.

<sup>d</sup> Without external shield.

<sup>e</sup> Plate and grid 3 of opposite unit grounded.

<sup>f</sup> Voltages and plate current apply to each section.

<sup>g</sup> Adjusted to give a dc grid-No.1 current of 100 microamperes.

